

TRANSMITTAL OF APPEAL BRIEF (Large Entity)

Docket No.
SHL.0152D1US

In Re Application Of: Mark W. Brockman et al.

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
10/701,325	11-04-2003	John J. Kreck	21906	3673	4937

Invention: Inductively Coupled Method and Apparatus of Communicating with Wellbore Equipment

COMMISSIONER FOR PATENTS:

Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed on November 8, 2005.

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Dated: November 3, 2005

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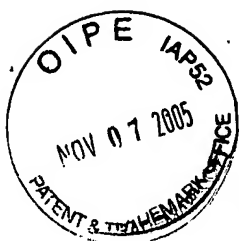
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Mark W. Brockman et al.	§	Art Unit:	3673
		§		
Serial No.:	10/701,325	§		
		§	Examiner:	John J. Kreck
Filed:	November 4, 2003	§		
		§		
For:	Inductively Coupled Method	§	Atty. Dkt. No.:	SHL.0152D1US
	and Apparatus of	§		(68.0114CIP/DIV)
	Communicating with Wellbore	§		
	Equipment	§		

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APPEAL BRIEF PURSUANT TO 37 C.F.R § 41.37

Sir:

The final rejection of claims 1-21 and 25 is hereby appealed.

I. REAL PARTY IN INTEREST

The real party in interest is the Schlumberger Technology Corporation.

II. RELATED APPEALS AND INTERFERENCES

None.

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III. STATUS OF THE CLAIMS

Claims 1-21 and 25 have been finally rejected and are the subject of this appeal.

Claims 22-24, 26, and 27 have been objected to, but were indicated by the Examiner as containing allowable subject matter. The attached Amendment Under 37 C.F.R. § 1.116 has placed these claims in condition for allowance.

IV. STATUS OF AMENDMENTS

An Amendment Under 37 C.F.R. § 1.116 is submitted herewith. The Amendment amends claims 22 and 26 into independent form without changing their scope, to place these claims in condition for allowance as indicated in the Office Action dated June 10, 2005. Entry of this Amendment is appropriate since the Amendment has removed issues from appeal.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The following provides a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings by reference characters, as required by 37 C.F.R. § 41.37(c)(1)(v). Each element of the claims is identified by a corresponding reference to the specification and drawings where applicable. Note that the citation to passages in the specification and drawings for each claim element does not imply that the limitations from the specification and drawings should be read into the corresponding claim element.

Independent claim 1 recites an apparatus for use in a well having a main bore (Fig. 12:422; Fig. 14:502) and a lateral branch (Fig. 12:426; Fig. 14:504, 506, 508), the lateral branch comprising an electrical device (Fig. 13:484), the apparatus comprising:

an inductive coupler mechanism (Fig. 13:468, 477, 470, 498; Fig. 14:514, 516, 530, 534, 540, 542, 548, 556, 558) to electrically communicate electrical signaling in the main bore with the electrical device in the lateral branch (Specification, p. 14, lines 14-22; p. 17, line 9-p. 18, line 29; p. 19, line 25-p. 21, line 5).

Independent claim 2 recites an apparatus to communicate electrical signaling from a main bore (Fig. 12:422; Fig. 14:502) of a well to equipment in a lateral branch (Fig. 12:426; Fig. 14:504, 506, 508), comprising:

a connector mechanism (Figs. 7-13:418, 428; Fig. 14:512, 526, 544, 550) adapted to connect equipment in the main bore to equipment in the lateral branch (Specification, p. 14, line 16-p. 17, line 8); and

a first inductive coupler portion (Fig. 13:470; Fig. 14:530, 556, 558) attached to the connector mechanism to communicate electrical signaling with the lateral branch equipment (Specification, p. 18, lines 16-19; p. 20, lines 11-14, 24-30).

Independent claim 8 recites a completion string for use in a well having a main bore and a lateral branch, comprising:

equipment in the main bore (Fig. 12:422; Fig. 14:502) and in the lateral branch (Fig. 12:426; Fig. 14:504, 506, 508);

a first inductive coupler assembly (Fig. 13:468; Fig. 14: 516, 542, 548) proximal the equipment in the main bore (Specification, p. 17, lines 14-19; p. 19, lines 29-31; p. 20, lines 17-23);

a second inductive coupler assembly (Fig. 13:470; Fig. 14:530, 556, 558) proximal the equipment in the lateral branch (Specification, p. 18, lines 16-19; p. 20, lines 11-14, 24-30);

and

an electrical cable (Fig. 13: 466; Fig. 14:528, 552, 554) connecting the first and second inductive coupler assemblies (Specification, p. 17, lines 11-16, 20-23; p. 20, lines 8-11, 24-27).

Independent claim 20 recites a method of communicating between main bore (Fig. 12:422; Fig. 14:502) equipment and lateral branch (Fig. 12:426; Fig. 14:504, 506, 508) equipment in a well, comprising:

providing a first inductive coupler assembly (Fig. 13:470; Fig. 14:530, 556, 558) electrically connected to the main bore equipment and in communication with the lateral branch equipment (Specification, p. 18, lines 16-19; p. 20, lines 11-14, 24-30); and

transmitting electrical signaling over an electrical cable (Fig. 13:466; Fig. 14:528, 552, 554) connected to the first inductive coupler assembly (Specification, p. 17, lines 11-16, 20-23; p. 20, lines 8-11, 24-27).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- A. Objection Of Claims 22-24**
- B. Claims 1-17, 20, 21, And 25 Were Rejected Under 35 U.S.C. § 103 Over U.S. Patent No. 5,959,547 (Tubel) In View Of U.S. Patent No. 5,008,664 (More).**
- C. Claims 18 And 19 Were Rejected Under § 103 Over Tubel And More In View Of U.S. Patent No. 5,542,472 (Pringle).**

VII. ARGUMENT

The claims do not stand or fall together. Instead, Appellant presents separate arguments for various independent and dependent claims. Each of these arguments is separately argued below and presented with separate headings and sub-headings as required by 37 C.F.R. § 41.37(c)(1)(vii).

A. Objection Of Claims 22-24

1. Claims 22-24.

Claims 22-24 were objected to because the use of the terms “second” and “third inductive coupler portions” was stated by the Examiner as being inconsistent with use of the terms in

claims 4 and 5. 6/10/2005 Office Action at 2. Appellant respectfully submits that the terms “second” and “third” are used merely as labels to identify different inductive coupler portions. Appellant does not intend “second inductive coupler portion” and “third inductive coupler portion” in claims 22-24 to necessarily mean the same thing as the same terms in claims 4 and 5. Since claims 22-24 do not depend from claims 4 and 5, it is respectfully submitted that there is no inconsistency between claims 22-24 and claims 4-5. Therefore, it is respectfully submitted that the meaning of claims 22-24 is clear. Withdrawal of the objection is respectfully requested.

B. Claims 1-17, 20, 21 And 25 Were Rejected Under 35 U.S.C. § 103 Over U.S. Patent No. 5,959,547 (Tubel) In View Of U.S. Patent No. 5,008,664 (More).

1. Claims 1, 20, 21, and 25.

Independent claim 1 was rejected as being obvious over the asserted combination of Tubel and More. It is respectfully submitted that the Examiner has failed to establish a *prima facie* case of obviousness against claim 1, as there existed no motivation or suggestion to combine the teachings of Tubel and More to achieve the claimed invention. *See* M.P.E.P. § 2143 (8th ed., Rev. 3), at 2100-135.

Claim 1 recites an apparatus for use in a well having a main bore and a lateral branch, the lateral branch comprising an electrical device, and the apparatus comprising an inductive coupler mechanism to electrically communicate electrical signaling in the main bore with the electrical device in the lateral branch.

As conceded by the Examiner, Tubel fails to teach the inductive coupler mechanism recited in claim 1. 6/10/2005 Office Action at 2. The Examiner relied upon More as teaching such an inductive coupler mechanism. *Id.* at 3. However, the Examiner has failed to establish that there existed any motivation or suggestion to combine the teachings of Tubel and More.

The Examiner cited two cases as purportedly supporting the obviousness rejection: *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); and *In re Jones*, 958 F.2d 347, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992). See 6/10/2005 Office Action at 7. It is respectfully submitted that these cases clearly do not support the obviousness rejection. *In re Jones* held that “[b]efore the PTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.” *In re Jones*, 958 F.2d at 351. In *In re Jones*, the court stated that the PTO failed to cite to any objective evidence that provided the motivation to modify the teachings of the prior art references to achieve the claimed invention, and thus held that the PTO failed to establish a *prima facie* case of obviousness. *Id.* Similarly, *In re Fine* held that the PTO can satisfy the burden required to establish a *prima facie* case of obviousness “only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.” *In re Fine*, 837 F.2d at 1074. Specifically, the court in *In re Fine* criticized the PTO’s use of impermissible hindsight in reaching the obviousness rejection. *Id.* at 1075. “One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” *Id.*

Note that More teaches use of an inductive coupler mechanism to couple components inside a main wellbore -- there is no suggestion whatsoever in More of using the same technique to connect between a main wellbore and a lateral branch. Although Tubel teaches electrical communication between the main wellbore and a lateral branch, it does not suggest that an inductive coupler mechanism can be used to electrically communicate electrical signaling in the

main bore with the electrical device in the lateral branch. Significantly, although Tubel mentions the use of an inductive coupler, Tubel mentions the use of the inductive coupler in a side pocket mandrel depicted in Fig. 8 of Tubel. Thus, although Tubel was *aware* that inductive couplers were available as a technique for communicating, Tubel specifically did *not* suggest that such an inductive coupler can be used to communicate electrical signaling in the main bore with an electrical device in the lateral branch. This is significant objective evidence establishing that a person of ordinary skill in the art prior at the time of the present invention did not contemplate the use of an inductive coupler to connect main bore electrical signaling to lateral branch devices. The only suggestion of the claimed combination is provided by the disclosure of the present application itself -- however, the obviousness rejection of claim 1 cannot be based on impermissible hindsight that benefits from the teachings of the present application. *See In re Fine*, 837 at 1075 ("It is essential that 'the decisionmaker forget what he or she has been taught at trial about the claimed invention and cast the mind back to the time the invention was made ... to occupy the mind of one skilled in the art who is presented only with the references, and who is normally guided by the then-accepted wisdom in the art.'").

Objectively, looking to the teachings of Tubel and More, a person of ordinary skill in the art would not have been motivated to combine their teachings. Electrically coupling components in a main wellbore and lateral branch is associated with challenges that are not present in coupling components within a main wellbore. Neither Tubel nor More suggests the use of an inductive coupler mechanism to address these challenges.

Therefore, clear legal error has been committed in rejecting claim 1 over Tubel and More, since a *prima facie* case of obviousness has clearly not been established with respect to claim 1.

Independent claim 20 is similarly allowable over the cited references.

In view of the foregoing, reversal of the final rejection of the above claims is respectfully requested.

2. Claims 2-7.

Independent claim 2 was also rejected as obvious over Tubel and More. Independent claim 2 recites a connector mechanism to connect equipment in a main bore to equipment in a lateral branch, and a first inductive coupler portion attached to the connector mechanism to communicate electrical signaling with the lateral branch equipment. As noted above, there is no motivation to combine Tubel and More to achieve the recited subject matter. Furthermore, even if Tubel and More can be properly combined, there is no teaching or suggestion by the hypothetical combination of Tubel and More of a first inductive coupler portion *attached to the connector mechanism* to communicate electrical signaling with the lateral branch equipment.

In response to the arguments presented above, the Examiner stated that this argument “is not at all persuasive” and that “[e]verything in the wells shown by Tubel and More are ‘attached’; thus one of ordinary skill in the art would know to make any modification ‘attached’: to do otherwise would result in the components being swept along the flow, lost, or damaged.” 6/10/2005 Office Action at 7.

Appellant respectfully disagrees with this assertion. Claim 2 specifically states that the first inductive coupler portion is attached to the connector mechanism, which is used to connect equipment in the main bore to equipment in the lateral branch. There is no teaching or suggestion in either Tubel or More of attaching an inductive coupler portion to the connector mechanism. Note that Tubel teaches providing an inductive coupler portion in a side pocket mandrel (see Fig. 8 of Tubel). More teaches attaching inductive coupler portions at a wellhead and also to downhole tubing in the main bore – More does not teach attaching an inductive

coupler portion to a connector mechanism as recited in claim 2. Thus, although Appellant agrees with the Examiner that an inductive coupler portion would typically be attached to some structure in a well, there is no teaching or suggestion in either Tubel or More of attaching an inductive coupler portion to a connector mechanism adapted to connect equipment in the main bore to equipment in the lateral branch.

Therefore, a *prima facie* case of obviousness has not been established with respect to claim 2. Dependent claims of claim 2 are allowable for at least the same reasons.

In view of the foregoing, reversal of the final rejection of the above claims is respectfully requested.

3. Claims 8-17.

Independent claim 8 was also rejected as obvious over Tubel and More. With respect to independent claim 8, there existed no motivation or suggestion to combine the teachings of Tubel and More to achieve a completion string that includes equipment in the main bore and in the lateral branch, a first inductive coupler assembly proximal the equipment in the main bore, a second inductive coupler assembly proximal the equipment in the lateral branch, and an electrical cable connecting the first and second inductive coupler assemblies. Tubel fails to teach or suggest the first and second inductive coupler assemblies, and More fails to teach or suggest the second inductive coupler assembly proximal equipment in the *lateral branch*. No suggestion existed in either of the references to combine their teachings to achieve the claimed invention. Moreover, the hypothetical combination of the references also does not teach or suggest the claimed invention. Therefore, a *prima facie* case of obviousness has clearly not been established with respect to claim 8.

In view of the foregoing, reversal of the final rejection of the above claims is respectfully requested.

C. Claims 18 And 19 Were Rejected Under § 103 Over Tubel And More In View Of U.S. Patent No. 5,542,472 (Pringle).

1. Claims 18 and 19.

Dependent claims 18 and 19 are allowable for at least the same reasons as independent claim 8.

In view of the defective obviousness rejection of claim 8 over Tubel and More, it is respectfully submitted that the obviousness rejection of dependent claims 18 and 19 over Tubel, More, and Pringle is also defective.


Reversal of the final rejection of the above claims is respectfully requested.

VIII. CONCLUSION

In view of the foregoing, reversal of all final rejections and allowance of all pending claims is respectfully requested.

Respectfully submitted,

Date: Nov. 3, 2005



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APPENDIX OF APPEALED CLAIMS

The claims on appeal are:

1 1. An apparatus for use in a well having a main bore and a lateral branch, the lateral branch
2 comprising an electrical device, the apparatus comprising:
3 an inductive coupler mechanism to electrically communicate electrical signaling in the
4 main bore with the electrical device in the lateral branch.

1 2. Apparatus to communicate electrical signaling from a main bore of a well to equipment
2 in a lateral branch, comprising:
3 a connector mechanism adapted to connect equipment in the main bore to equipment in
4 the lateral branch; and
5 a first inductive coupler portion attached to the connector mechanism to communicate
6 electrical signaling with the lateral branch equipment.

1 3. The apparatus of claim 2, further comprising an electrical cable connected to the first
2 inductive coupler portion.

1 4. The apparatus of claim 3, further comprising a second inductive coupler portion
2 connected to the electrical cable and attached to the connector mechanism, the second inductive
3 coupler portion adapted to communicate signaling with the main bore equipment.

1 5. The apparatus of claim 4, further comprising a third inductive coupler portion that is part
2 of the main bore equipment to inductively couple to the second inductive coupler portion.

1 6. The apparatus of claim 5, further comprising a fourth inductive coupler portion that is
2 part of the lateral branch equipment to inductively couple to the first inductive coupler portion.

1 7. The apparatus of claim 2, wherein the connector mechanism is further adapted to connect
2 equipment in the main bore to equipment in a second lateral branch, the apparatus further
3 comprising a second inductive coupler portion attached to the connector mechanism to
4 communicate electrical signaling with the second lateral branch equipment.

1 8. A completion string for use in a well having a main bore and a lateral branch,
2 comprising:
3 equipment in the main bore and in the lateral branch;
4 a first inductive coupler assembly proximal the equipment in the main bore;
5 a second inductive coupler assembly proximal the equipment in the lateral branch;
6 and
7 an electrical cable connecting the first and second inductive coupler assemblies.

1 9. The completion string of claim 8, further comprising equipment in a second lateral
2 branch, the completion string further comprising a third inductive coupler assembly proximal the
3 equipment in the lateral branch.

1 10. The completion string of claim 9, further comprising a fourth inductive coupler assembly
2 proximal the main bore equipment and a second electrical cable connecting the third and fourth
3 inductive coupler assemblies.

1 11. The completion string of claim 8, wherein the equipment in the main bore includes a
2 tubing, the completion string further comprising a connector member between the tubing and the
3 lateral branch equipment.

1 12. The completion string of claim 11, wherein the lateral branch equipment comprises an
2 electrical device.

1 13. The completion string of claim 12, wherein the electrical device comprises a monitoring
2 module.

1 14. The completion string of claim 12, wherein the electrical device comprises a control
2 module.

1 15. The completion string of claim 11, further comprising a casing having a window open to
2 the lateral branch, wherein the connector member extends through the casing window.

1 16. The completion string of claim 11 wherein the first inductive coupler assembly comprises
2 one portion attached to the tubing and another portion attached to the connector member.

1 17. The completion string of claim 16, wherein the second inductive coupler assembly
2 comprises one portion attached to the connector member and another portion attached to the
3 lateral branch equipment.

1 18. The completion string of claim 8, further comprising a hydraulic control line adapted to
2 extend from the main bore to the lateral branch.

1 19. The completion string of claim 18, further comprising a lateral branch connector adapted
2 to connect the main bore equipment to lateral branch equipment, the lateral branch connector
3 comprising a conduit to carry the cable and a conduit to carry the hydraulic control line.

1 20. A method of communicating between main bore equipment and lateral branch equipment
2 in a well, comprising:

3 providing a first inductive coupler assembly electrically connected to the main bore
4 equipment and in communication with the lateral branch equipment; and

5 transmitting electrical signaling over an electrical cable connected to the first inductive
6 coupler assembly.

1 21. The method of claim 20, further comprising:

2 providing a second inductive coupler assembly electrically connected to the lateral
3 branch equipment; and

4 electrically connecting the second inductive coupler assembly to the first inductive
5 coupler assembly.

1 22. Apparatus to communicate electrical signaling from a main bore of a well to equipment
2 in a lateral branch, comprising:

3 a connector mechanism adapted to connect equipment in the main bore to equipment in
4 the lateral branch;

5 a first inductive coupler portion attached to the connector mechanism to communicate
6 electrical signaling with the lateral branch equipment; and

7 a tubing having a lower portion, the lower portion of the tubing having a second inductive
8 coupler portion,

9 wherein the connector mechanism has a third inductive coupler portion and a receptacle
10 to receive the lower portion of the tubing to position the second inductive coupler portion next to
11 the third inductive coupler portion.

1 23. The apparatus of claim 22, further comprising a module to engage an internal profile of
2 the connector mechanism, the module having a fourth inductive coupler portion that is positioned
3 next to the first inductive coupler portion when the module is engaged to the internal profile of
4 the connector mechanism.

1 24. The apparatus of claim 23, wherein the module comprises one of a sensor module and a
2 control module.

1 25. The method of claim 21, further comprising:

2 providing a connector to connect the main bore equipment to the lateral branch
3 equipment, wherein the connector has a receptacle to receive the main bore equipment, the
4 connector having a portion of the first inductive coupler assembly.

APPENDIX OF ALLOWABLE CLAIMS

1 26. A method of communicating between main bore equipment and lateral branch equipment
2 in a well, comprising:

3 providing a first inductive coupler assembly electrically connected to the main bore
4 equipment and in communication with the lateral branch equipment; and
5 transmitting electrical signaling over an electrical cable connected to the first inductive
6 coupler assembly;

7 providing a second inductive coupler assembly electrically connected to the lateral
8 branch equipment; and

9 electrically connecting the second inductive coupler assembly to the first inductive
10 coupler assembly; and

11 providing a connector to connect the main bore equipment to the lateral branch
12 equipment, wherein the connector has a receptacle to receive the main bore equipment, the
13 connector having a portion of the first inductive coupler assembly,

14 wherein the main bore equipment includes a tubing having a lower portion to engage in
15 the receptacle of the connector, the lower portion of the tubing having another portion of the first
16 inductive coupler assembly.

1 27. The method of claim 26, further comprising providing a module into the connector, the
2 module having a portion of the second inductive coupler assembly, and the connector having
3 another portion of the second inductive coupler assembly.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.